

THE COCCIDÆ OF BRITISH NORTH AMERICA.

BY GEO. B. KING, LAWRENCE, MASS.

*(Continued from page 180.)**Ripersia*, Sign.

Ripersia lasii, Ckll., 1896. (Native.) Originally described from ant-nests in Mass.; was found in an ants' nest (*Lasius Americanus*, Em.) at Toronto, Canada, in 1897, by Mr. R. J. Crew. It has been found infesting the roots of China asters in Mass.

Bib.—CAN. ENT., xxxi. (1899), 110.

Dactylopius, Costa.

Dactylopius longispinus, Targ. (Introduced.) The greenhouse Mealy bug, found throughout the civilized world, occurs in Canada in all the Provinces where greenhouse plants are grown; it is recorded from South Quebec.

Bib.—29th Annual Report, Ent. Soc., Ont., 1898, 43.

KERMESINÆ.

Kermes, Roitard.

Kermes Pettiti, Ehrh., 1899. (Native.) This scale was found at Jubilee Point, on Rice Lake, near Peterborough, Ontario, by Dr. Fletcher several years ago, on *Quercus rubra*. Up to 1899, the species was considered to be a form of *K. galliformis*, and was confused with that species up to that time. It is a very common species in the U. S., but seems to be rare in Canada.

Bib.—Psyche, ix. (1900), 81.

ORTHEZIINÆ.

Orthezia, Bosc.

Orthezia Americana, Walker, 1852. (Native.) Recorded from Grimsby, Ontario, on Golden-rod. Dr. Fletcher states that he has found it at Ottawa and in several other places.

Bib.—Rpt. U. S. Dep. Agr., 1880, p. 349; 32nd Ann. Rpt. Mass. Agr. Coll., 1895, p. 124.

ASTEROLECANIINÆ.

Asterolecanium, Targ.

Asterolecanium variolosum, Ratz., 1870. (Introduced.) Originally described as *Coccus variolosus*, and often cited as *Asterodiaspis quercicola*, *Asterolecanium quercicola*, *Asterodiaspis variolosus* and *Coccus quercicola*. I received this from by Dr. Fletcher, who found it last year on young oak trees at Ottawa, Canada, which were set out five or six years ago, and

came from a nursery in Pennsylvania. Judging from the appearance of the infested twigs sent, they must be quite destructive. It has also been destructive to oaks at Niagara Falls, Ontario. The species is common at Washington, D. C., and is found at New York, Conn., and Mass., also on oak. I have some from Germany, on oak, sent Prof. Cockerell. *Mytilaspis ulmi*, L., are on the same twigs.

LECANIINÆ.

Lecanium, Illig.

Lecanium hesperidum, L., 1758. (Introduced.) This occurs as a greenhouse species in Canada, in all the Provinces where greenhouse plants are grown. It is a very common pest in Europe and the U. S.

Lecanium pyri, Schr., 1781. (Introduced.) Found on apple on Prince Edward Island in 1894. It is not as yet a very common species. I have found it once in Mass. on pignut hickory.

Bib.—CAN. ENT., xxvi. (1894), 35.

Lecanium antennatum, Sign. var. (Native.) Recorded from Jubilee Point, Rice Lake, Ontario, on red oak, *Quercus rubra*.

Bib.—CAN. ENT., xxvii. (1895), 36.

Lecanium juglandis, Bouché. (Perhaps introduced.) This was received from Prof. Cockerell last year, marked on the label "on plum at Queenston, Ontario." There is a scale infesting the plum trees in New York, called *L. cerasifex*, Fitch. The one from Queenston is not that species.

Lecanium quercitrionis, Fitch, 1856. (Native.) Found on *Quercus coccinea* at Ottawa, Canada. This is a common species throughout North America.

Bib.—CAN. ENT., xxv. (1893), 221.

Lecanium Fitchi, Sign., 1873. (Native.) Recorded from St. David's, Ontario, on Lawton blackberry. This seems to be a species not well defined, and will need further study when found on blackberry again.

Bib.—Insect Life, vii. (1894), 30.

Lecanium Fletcheri, Ckll., 1893. (Native.) Originally described from specimens found by Dr. Fletcher at Ottawa, abundant on a hedge of *Thuja occidentalis* and on trees of the same species at Stittsville, Ont., 15 miles from Ottawa. It was next found at New York by Mr. Pettit, and next by the present writer in 1898 on *Arbor vitæ*, at Lawrence, Mass. Last year, in February, I received some scales on *Thuja occidentalis* from Vienna, marked n. sp., which proved to be *L. Fletcheri*. It

was next found by me on August 13, 1900, at the Harvard botanical gardens, Cambridge, Mass., on *Thuja occidentalis* var. The lot described from, by Prof. Cockerell, were parasited by a *Chalcidid*. Those which Dr. Fletcher sent me were also parasitized.

For a record of the excessive abundance of parasites of this species, see L. O. Howard, Bull. VII., N. S., Div. Ent. U. S. Dep. Agr., 1897, p. 62-63.

Bib.—CAN. ENT., xxv. (1893), 221; 29th Ann. Rpt. Ent. Soc., Ontario (1898), 88; CAN. ENT., xxxii. (1899), 141; Psyche, viii. (1899), 349; Psyche, ix. (1901), 154.

Lecanium Canadense, Ckll., 1895. (Native.) Originally described from Stittsville, Ont., about 15 miles from Ottawa, on *Ulmus racemosa*; received also from Nappan, Nova Scotia, on *Ulmus Americana*. The scales from Stittsville were affected by a *Coccinellid* (*Scymnus punctatus*) and an *Encyrtid* parasite. This species has proved a serious enemy of *Ulmus Americana* at Ottawa. Dr. Fletcher has received specimens also from Brandon, Man. The scale has since been found in Maine and Mass. The species was described as *L. caryæ*, var. *Canadense*, but by further study in 1898, Prof. Cockerell decided that it was a distinct species.

Bib.—CAN. ENT., xxvii. (1895), 253; xxx. (1898), 294; The Industrialist, April, 1899, p. 232.

Lecanium pseudhesperidum, Ckll., 1895. (Nativity unknown.) Described from specimens found in a greenhouse at Ottawa, Canada, Dec. 15, 1894, on a *Cattleya*. *Aulacaspis Boisduvalii* was found on the same plant.

Bib.—American Naturalist, April 1st, 1895, p. 381.

Lecanium maclurarum, Ckll., 1898. (Native.) Described from material collected near Niagara, Ontario; rather abundant on twigs of Osage orange, June 17, 1898.

Bib.—CAN. ENT., xxx. (1898), 294; The Industrialist, April, 1899, 236.

Lecanium caryarum, Ckll., 1898. (Native.) Described from specimens found on *Carya alba*, at Niagara, Ontario, June 17, 1898, and said to be very abundant.

Bib.—CAN. ENT., xxx. (1898), 293; The Industrialist, April, 1899, p. 233.

Lecanium nigrofasciatum, Perg., 1898. (Native.) The Peach

Lecanium is found in Western Ontario, on *Acer saccharinum*. Just recently Dr. Fletcher sent me specimens on white maple (*A. dasycarpum*) from St. Catharines, Ontario. Although this is called the Peach Lecanium, it is by no means confined to peach trees, as it is found on various species of maple, plum, apple, *Cratægus*, sycamore, *Brumelia*, linden, olive and *Vaccinium*.

Bib.—Bull. No. 18, U. S. Dep. Agr., Div. Entom. (1898), p. 27 ; CAN. ENT., XXI. (1899), 141.

Lecanium cerasifex, Fitch, 1856. (Native.) Said to have been found on plum at Queenston, Ontario, in 1894. and since that in many places in the fruit district extending from Niagara to Burlington, Ont.

Bib.—Rpt. Exp. Farm, 1895, p. 157 ; Trans. Royal Soc. Can., 1899–1900, p. 219.

Lecanium pruinorum, Coql., 1891. (Native.) This was found on peach at Niagara, Ontario. Received from Prof. Cockerell last year, sent to him by Dr. Fletcher.

Lecanium Websteri, Ckll. and King, 1901. (Native.) On black and red currant in Nova Scotia and at Ottawa, Canada. The species was for a long time supposed to be Fitch's *L. ribis*. It seems to be quite a general feeder, as will be seen when reference is made to the literature.

Bib.—CAN. ENT., xxxiii. (1901), 108.

Lecanium carya, Fitch, 1856. (Native.) This was found sparingly on peach at Niagara, Ontario, by Dr. Fletcher in 1898, and since that has been occasionally found by Mr. George E. Fisher on the same tree ; but never in abundance. It is the largest species of the subgenus *Eulecanium* found in North America. All that is known of the species will be found in the literature cited below.

Bib.—Entomological News, xii. (1901), 50–1.

Lecanium. Species probably new ; not sufficient for study ; was received with the above species ; also found at Niagara, Ontario, on peach.

Lecanium armeniacum, Craw, 1892. (Native.) The apricot scale was found infesting orchards at Sherbrooke, Quebec, in 1899 ; it is common in California.

Bib.—Ann. Rpt. Exp. Farms, 1899, p. 160.

Lecanium cynosbati, Fitch, 1856. (Native.) Was received from Mr. John Dearness in 1900 ; found at London, Ontario, on honey locust. Dr. Fletcher states that he found this species abundant on honey-locust trees in the streets of Dundas, Ont., in 1898.

Pulvinaria, Targ.

Pulvinaria innumerabilis, Rathv., 1854. (Native.) The cottony maple scale. A common North American species. Recorded from grapevines and maple at London and other places in Western Ontario.

Bib.—15th Ann. Rpt. Ent. Soc., Ontario, 1884, p. 27; 29th *ibid*, 1898, p. 91.

Pulvinaria brassie, Ckll., 1895. (Nativity unknown.) Now considered identical with *P. floccifera*, Westw. Was found in a greenhouse at Ottawa, Canada, Dec. 15, 1894, on leaves of *Brassia verrucosa*. The plant is a native of Mexico, and was purchased from a New Jersey florist.

Bib.—CAN. ENT., xxvii. (1895), 135.

Pulvinaria occidentalis, Ckll., 1897. (Nativity uncertain.) Found infesting in a serious manner a whole plantation of red and white currant at Chilliwack, British Columbia, by Rev. G. W. Taylor, in the spring of 1899. In July (the same year) Dr. Fletcher visited the plantation and found these scales to be in enormous numbers, the white flocculent threads giving the bushes the same appearance as if a light fall of snow were upon them. It may turn out, however, that when we can get some of the European species of *P. ribesiae* to compare with it, it may prove to be that species.

Bib.—Ann. Rpt. Exp. Farms, 1899, p. 203.

Eriopeltis, Sign.

Eriopeltis festuca, Fonse, 1834. (Introduced.) The cottony grass scale. This was found by Mr. A. H. McKay, on grass, in large numbers in Cumberland Co., Nova Scotia, in 1889. It was cited as a new species of *Rhizococcus*, and is said to occur in Dakota, Indiana and Illinois, on timothy and red-top grass. It is parasited by a Dipteron, *Leucopis bellula*. It has occurred, in conspicuous numbers, several times in Nova Scotia and New Brunswick of late years.

Bib.—Insect Life, i. (1889), 385; *ib.* ii. (1890), 326; Report Exp. Farm, 1895, p. 145; Trans. Royal Soc., Canada, 1899-1900, p. 216.

DIASPINÆ.

Aspidiotus, Bouché.

Aspidiotus hederæ, Vall., 1829. (Introduced.) It is reported from British Columbia, and will be found in all the Provinces where greenhouse plants are grown. It is a common species on palms, *Cycas revoluta*, olive, ivy, etc. I have also received it on palm found in a house at London, Ontario, by Mr. John Dearness.

Aspidiotus Forbesi, Johnson, 1896. (Native.) The Forbes scale. This has been received from Mr. John Dearness, on beech (*Fagus Americana*), November, 1900, at London, Ontario; also on hawthorn, plum and apple in many parts of Ontario. It is recorded from Ottawa on fragrant currant (*Ribes*).

Bib.—28 Ann. Rpt. Entom. Soc. Ont., 1897, p. 80.

29 “ “ “ 1898, p. 86-88.

30 “ “ “ 1899, p. 109.

Exp. Farm. Rpt., 1898, p. 205.

Trans. Royal Soc. of Can., 1899-1900, p. 219.

Aspidiotus ancylus, Putn., 1877. (Native.) The Putnam scale. It is recorded from Ottawa, on elm. I received it from Dr. Fletcher, April 10, 1900, on willow from Toronto, and just recently on plum from St. Catharines.

Bib.—28 Ann. Rpt. Ent. Soc. Ont., 1897, p. 80.

29 “ “ “ 1898, p. 86 and 88.

30 “ “ “ 1899, p. 109.

Exp. Farm Rpt., 1898, p. 205.

Trans. Roy. Soc. Can., 1899-1900, p. 219.

Aspidiotus ostreaformis, Curtis, 1843. (Introduced.) The European orchard scale. Reported from Chilliwack, British Columbia. Is now received from Western Ontario and from St. Catharines, Ontario, on maple (*Acer dasycarpum*), sent by Dr. Fletcher, and found by Mr. George E. Fisher, April, 1901.

Bib.—Yearbook U. S. Dept. Agr., 1899, p. 746.

Trans. Roy. Soc. Can., 1899-1900, p. 219.

30 Ann. Rpt. Entom. Soc. Ont., 1899, p. 67 and 109.

Aspidiotus perniciosus, Comst., 1881. (Introduced.) The pernicious scale. This was first found near Kelowna, on Lake Okanagan, British Columbia, in 1894, and in 1897 it was reported as found in the Provinces of British Columbia and Ontario. The first lot received by the Government Entomologist was from an Ontario orchard near Chatham, in Kent Co., January, 1897, and soon after from Niagara and St. Catharines, and Kingsville in Essex Co. It has since been found on Vancouver Island (where it has been entirely eradicated); also at Guilds, south of Blenheim, Harwich, Belleville, London East, Chatham, Guelph, Winona, Burlington, Essex Centre and St. Thomas, Ont. Mr. John Dearness found a mite attacking this insect,

received from Mr. J. Gordon at Guilds, Kent Co., Ont., in 1899. Identified as *Tyroglyphus malus*. There is also a moniliform fungus found on specimens from plum.

Bib.—Farmer's Advocate, London, Ont., 1894.

CAN. ENTOM., Vol. 26, 1894, p. 355.

Entom. News, Vol. 9, 1898, p. 96.

28 Ann. Rept. Ent. Soc. Ont., 1897, p. 78.

29 " " " " 1898, p. 86.

30 " " " " 1899, p. 3.

31 " " " " 1900, p. 79-87.

Evid. of Dr. Fletcher before the House of Com., 1898, p. 1-12.

" " " " " 1899, p. 4-6.

" " " " " 1900, p. 1-7.

Trans. Roy. Soc. Can., 1899-1900, p. 218.

Ann. Rept. Exp. Farm, 1898, p. 204.

Aspidiotus (Targionia) Dearnessi, Ckll., 1898. This was found by Mr. John Dearness, August 20, 1898, on twigs of *Arctostaphylos uva-ursi*, in the Ojibway Indian Reserve in Saugeen, in the Bruce Peninsula, on the sandy shore of a little bay of Lake Huron.

Bib.—CANADIAN ENTOMOLOGIST, Vol. 30, 1898, p. 266.

Aspidiotus diffinis, Newst., 1893. (Prob. introduced.) This is found in the woods on basswood (*Tilia americana*). I have received examples from Mr. Dearness, found in the woods at several places in Western Ontario, 1900, and am of the opinion that it may yet be proved to be a variety of *diffinis*.

Bib.—Entomological News, xi. (1900), p. 425.

Chrysomphalus, Ashm.

Chrysomphalus dictyospermi, Morg., 1889. (Introduced.) Dr. Fletcher sent this to me on leaves of cinnamon found in a greenhouse at Ottawa, April, 1900. It is found in hothouses in the United States.

Aulacaspis, Ckll.

Aulacaspis Boisduvalii, Sign., 1869. (Introduced.) Found in a greenhouse at Ottawa, Canada, on *Cattleya*, Dec. 15, 1894.

Bib.—American Naturalist, 1895, p. 381.

Aulacaspis rosæ, Bouché, 1833. (Introduced.) Often cited as *Diaspis rosæ*. This was received from Dr. Fletcher, January of this year. Found at Vancouver, British Columbia, out of doors, on rose bushes; also from Niagara, Ont., on outdoor roses.

Chionaspis, Sign.

Chionaspis pinifolia, Fitch, 1855. (Native.) A common species in North America. Recorded from Toronto, Ottawa, etc., Ontario, and found in British Columbia, in 1897, on *Abies grandis*. In Quebec Province found very abundantly on *Picea alba*, at Metis, Que., by Dr. B. J. Harrington (Fletcher).

Bib.—Spec. Bull. Mass. Agr. Coll., August 10, 1899, p. 22.

Chionaspis Lintneri, Comst., 1883. (Native.) Apparently quite common on wild alder (*Alnus incana*) and birch (*Betula papyrifera*), at St. John, New Brunswick; Charlottetown, and many other places in Prince Edward Island; Chateauguay, P. Q., and Ottawa, Ont.

Bib.—CAN. ENT., Vol. 27, 1895, p. 33.

“ “ “ 30, 1898, p. 85.

Spec. Bull. Mass. Agr. Coll., 1899, p. 28.

Chionaspis furfurus, Fitch, 1856. (Native.) The scurfy bark-louse. This is another common scale found on apple. It is recorded from Leamington, Ontario; Nova Scotia, New Brunswick, and Prince Edward Island. Mr. Dearness sent it to me on hawthorn in 1898.

Bib.—28 Ann. Rpt. Ent. Soc. Ont., 1897, p. 16.

29 “ “ “ 1898, p. 86.

30 “ “ “ 1899, p. 68.

CAN. ENT., Vol. 26, 1894, p. 354.

Spec. Bull. Mass. Agr. Coll., 1899, p. 28.

Psyche, Vol. 8, 1899, p. 336.

Chionaspis salicis-nigræ, Walsh, 1867. (Native.) Recorded from Leamington, Kingsville and Kingston, Ontario.

Bib.—Spec. Bull. Mass. Agr. Coll., 1899, p. 20.

Hemichionaspis, Ckll.

Hemichionaspis aspidistræ, Sign., 1869. (Introduced.) Originally described as a *Chionaspis*. I received this from Dr. Fletcher, on a fern (*Pteris serrulata*) found in a greenhouse at Ottawa, Canada, December 16, 1900. It is found in California, Washington, D. C., and Mass.

Mytilaspis, Sign.

Mytilaspis ulmi, L., 1758. (Introduced.) The oyster-shell bark-louse of the apple, heretofore recorded as *Mytilaspis pomorum*, Bouché. It is well established throughout Canada, and recorded from Ottawa on red and black currant, lilac, Spiræa, ash, dogwood, mountain ash, and hawthorn. I have it from Mr. John Dearness, found at London, Ontario, 1900, on apple. *Aspidiotus perniciosus*, Comst., are on the same twigs.

Bib.—CAN. ENT., Vol. 26, 1894, p. 354.

Exp. Farm Rpt., 1898, p. 205.

Evid. of Dr. Fletcher before the Com. of House of Comm., 1898, p. 18; *ibid*, 1900, p. 12.

28 Ann. Rept. Ent. Soc. Ont., 1897, p. 16.

29 “ “ “ “ 1898, p. 88.

30 “ “ “ “ 1899, p. 12 and 67.